THE CASE OF JUDGE VONDERSMITH—DEATH OF HIS WIFE.—In connection with the present condition of Judge Vondersmith, who is in prison in the debtors' apartment of Moyamensing, we may state that Mrs. Vondersmith died suddenly at Lancaster, on Sunday afternoon. She was generally in delicate health, and recent domestic troubles, no doubt, hastened her death. The death scene, which occurred under peculiarly distressing circumstances, was rendered still more painful by the dying wife and mother giving premature birth to a child a few moments before her dissolution. Her husband and father of her three children, all old enough to realize their situation, lying in prison in Philadelphia, charged with a high crime, and the cries of the children for parents, both lost to them, presented a scene of sorrow and distress rarely witnessed by human eye.

The house in which the family resided is subject to a lien of $7,000, with three years' interest, which the Government holds as an indemnification of the forfeited bail, and the children are, therefore, left not only orphans but homeless.

When the information of his wife's death was communicated to him on Monday, by a gentleman from Lancaster, Mr. F. Schroeder, he appeared deeply affected, and shed tears. During the whole of the night he constantly walked his cell, and was frequently heard to moan. The decease of Mrs. Vondersmith appears to have been a powerful blow upon his spirits. There are no less than fifteen bills of indictment pending against the Judge for fraud and forgery upon the United States Government, and if tried and convicted upon all, his term of imprisonment could be made to reach 150 years. [Philadelphia Pennsylvanian, 20th.

The shad fisheries of Connecticut are growing less and less every year, and the papers are calling upon the Legislature to take measures to prevent their being entirely destroyed.

The numerous friends of the Hon. John. P. Hale will be glad to learn that he has entirely recovered from the National Hotel sickness, and looks as robust and healthy as ever.

The Canal breaks on the Western Division had all been repaired at last, and the water let on again. We hear of no new ones.

New-York Daily Tribune.

INDUSTRIAL AND SCIENTIFIC INTELLIGENCE.

NEW PROCESS OF MANUFACTURING CAST-STEEL AND PURE IRON.—The combinations of metallic iron with carbon present a variety of qualities that seem altogether unaccountable, from the very slight differences in the proportions of carbon and of the few other elements which alone distinguish them chemically. Iron ores melted in a blast furnace, yield the metal in the midst of carbonaceous matters; and this is, in the moment of its birth, impregnated more or less with carbon, and with the metal silicium and other matters regarded as impurities. The metal drops down in the state of *cast iron*, a compound of metallic iron and carbon, the latter varying form two to five per cent, and silicium, which varies from one to four per cent. This *cast* or *pig iron* is of several varieties, known as Nos. 1, 2, 3, &c., or it is distinguished into the two kinds called *foundery iron*, and *high iron* or *forge metal*; the former more suitable for recasting and the latter for being converted into wrought or bar iron by the separation of the carbon, silicium and any impurities it contains, which is effected by the process called puddling. The real difference in the composition of the varieties of pig iron is not fully understood. Authorities differ as to their various percentages of carbon, to which, as well as to its manner of combination, the different qualities are attributed. In the foundery iron, which is soft and of a dark gray color, it is generally supposed that the carbon is only intermixed with the iron, while in the high iron, which is white like silver, and almost as hard as steel, it is chemically united with the metal. The iron manufacturers all believe that the darker the iron, the more carbon it contains; but chemical analysis does not sustain this opinion. High iron contains much less silicium than the soft gray iron, and as silicium is more difficult to separate from the iron than carbon is, it may be that its deficiency is the cause why the former is more easily converted into metallic iron; and very possibly it has quite as much to do in causing the peculiarities of cast iron as carbon has.

Cast iron is easily melted and is more or less brittle, but deprived of carbon and other mixtures, metallic or wrought iron is melted with extreme difficulty—indeed, it is regarded as infusible by any heat that can be produced by melting furnaces, provided it is protected from contact with any form of carbon, and that there is none of this left in its composition. The more it is refined or rendered pure, the tougher it is, and it is probable we have not yet learned the character and strength of absolutely pure iron. Metallic iron is distinguished by its softness when highly heated, and its great malleability, being then easily hammered into any shape. Cast iron can be melted and run into any shapes, and the surface of the castings may by a process, as yet comparatively new, be deprived of a portion of its carbon, and be converted almost into metallic iron, in which condition they are called malleable castings.

Steel is another combination of iron and carbon, the latter being present in the proportion of only one to two per cent. Its properties are very different from those of cast iron and of metallic iron, considering the very slight difference in their composition. Like the former, it is fusible; and, like the latter, is malleable, and can be welded.

Its most remarkable peculiarity is its quality of being *tempered* to a greater or less degree of hardness by heating and suddenly cooling. A skillful workman takes a bar of steel, heats it to a proper temperature in his forge-fire, places it upon his anvil, and with his hammer works it, as if it were wax, into the form he wishes, judging by slight changes of its color what its peculiar properties are, and by the mode in which he chills it in cold water giving to it the hardness required for any particular purpose. If he wishes to change its temper, another heat softens it, a few more blows of the hammer shape it, a dip in the water, and a look at its color, and it is done.

These forms of iron, all easily converted from one into the other, give us from the one metal the qualities we would naturally look for in three or four different metals; and the changes being very obscure in their nature and inexplicable in their effects, it is likely we are, with all our experience, still far from understanding the best method of working iron, as well as the full benefits to be derived from it. The difference in price seems as irreconcilable with the different compositions as the difference in quality. Cast iron is worth from a cent to two cents a pound, malleable iron from two to seven or eight cents, and steel from ten to sixteen cents. If the working of the metal were thoroughly understood, it does not seem probable that there would be this great difference in price for articles so nearly alike in composition.

The English method of making steel from bars of iron is a tedious process, and can never be extensively introduced into this country, any more than the long process adopted by the English of smelting copper ores. We have not the patience to prosecute an operation which requires fifteen days or more to infuse a little carbon into some bars of iron. Any Yankee would ruin himself in experiments to hasten the process, before he could make anything by the established method. We may make as good iron from our ores as the Swedish bars from the ores of the Danemora mine; but though admirably adapted for making the best steel, we prefer to pay the Sheffield manufacturer, and import the immense quantities which we consume. The English process of making cast-steel consists in carbonizing iron bars, which have already been decarbonized from the pigmetal; and then breaking them into small pieces and melting them in crucibles. From these the steel is run into ingots, which are then hammered into bars or rolled into plates. The first part of the operation is called the *cementation* process. The bars are piled up in layers in a tight oven or chamber, with fine charcoal intermixed between them, and all buried with a cover several inches thick. A fire circulating round the oven heats the whole mass red hot, and so it continues six or eight days, and another week passes while it is slowly cooling. Twenty charges in a year are considered good work for a cementing furnace. The bars, when taken out, are found to be blistered all over their surface—they have become brittle, the fibrous texture has changed to granular, and the color is white, like frosted silver. The hardness is increased, and the property of tempering is acquired. The bars are now steel, of the variety called *blistered*. When broken up and melted, the quality is improved and rendered more uniform. This is *cast-steel*. The great advantage of this process consists in the use of a refined iron, tolerably free from foreign matters.

On the continent of Europe a simpler process, and it would seem a more rational one, is adopted of effecting the same result, by depriving some of the better qualities of cast-iron of a portion of their carbon, and causing the rest to combine chemically with the iron. It is the puddling operation, stopped short of the full expulsion of all the carbon. Bessemer's process of burning out the carbon by hot air driven under pressure through the molten cast-iron, was a somewhat analogous operation. The difficulty seems to be to know when to stop the operation in order to obtain the article desired, either steel or the more thoroughly refined iron. The defect, no doubt, of these plans, is the failure to obtain an article of uniform qualities and composition. Neither controls sufficiently the mixture of the carbon, or frees the iron of all its impurities.

The method "The Damascus Steel Company" has employed successfully for a year past, at works they occupied on the Croton River, and at present at Port Richmond, Staten Island, and in Forty-seventh street, between the Second and Third avenues of this city, appears to be a simpler and more philosophical process than either of the others. It combines in one operation the thorough refining of iron, and the imparting to it just the proportion of carbon required for any particular quality of steel. Bar iron, in the form of old scraps, is melted in large crucibles containing 60 pounds, and a flux is mixed with the pieces of iron, which has the property of combining with and removing from the iron all foreign matters. Such matters are never entirely absent from the best bar iron. Carbonaceous substances in weighed quantities are added to the flux, to give to the iron just the amount of carbon desired. The efficiency of the refining flux is proved by the change imparted to the iron, when the carbonizing ingredients are omitted. This change is manifested by great increase of strength, and a tenacity such as was never before known. A bar of iron an inch square, prepared in this manner, and tried at the United States Government Works at Hoboken the last Winter, bore a tension strain of 116,874 pounds. The test strain adopted for the best Swedish iron is 72,000 pounds. It is supposed that all qualities of wrought iron, however bad, may, by the simple removal of the impurities in combination, be converted into absolutely pure iron of uniform quality. Whether the flux adopted is efficient to produce this result with all iron is not now the question. The following is a description of the process and of the cost of the manufacture.

In small furnaces made of fire-brick and arranged in rows, the top being level with the floor, the crucibles are placed, two in each furnace, upon anthracite for fuel. This is kept in vivid combustion by a blower at the bottom. Each crucible holds sixty pounds of iron and the flux scattered among the pieces. This consists of the salts prussiate of potash, sal ammoniac and a little common salt, with which a few ounces of fine charcoal and a little black oxide of manganese are mixed. Their whole value for a crucible holding sixty pounds of metal is not more than eight cents. In the operation we lately witnessed 2,515 pounds of anthracite were consumed in melting twelve crucibles of iron, making the cost of fuel to the crucible fifty-eight cents. Each crucible costs $1 and lasts four heats, making the cost to 60 pounds 25 cents. Labor is estimated at 16 cents to each melting of a crucible. Allowing the iron to cost $85 per tun, all the expense, beside superintendence, coal for the engine which drives the blast, and general expenses, is for each crucible about $3 54. The steel produced weighs the same as the iron, the carbon taken up replacing the waste. Adding to the other items the cost of reheating and drawing out the ingots into bars, the whole expense per tun of cast-steel bars is about $142 for the same quality of steel we import at a cost of $300. The cost of the iron is rated at that of the bars of Peru iron which we saw used. This iron may better be purchased in blooms and rolled out at the steel works with the same rolls used for the steel. The cost will thus be much reduced, and, indeed, lower-priced irons may be used as well. The time required to melt the wrought iron is from three to four hours. When we witnessed the operation, in the early part of the present month, the crucibles were in the fires three hours and a half. In regular working, three heats have been run in nine hours. A curious fact has been observed in relation to the difference of time required to melt wrought iron derived from charcoal pig and that from anthracite pig iron, the latter requiring from thirty to forty minutes more than the former. There is no perceptible difference yet noticed in the qualities of the steel made from these irons. When lifted out from the furnaces the crucibles are taken to the ingot molds, and the liquid metal is poured into them, precisely as is done in the melting and pouring of the blistered steel. This operation, therefore, involves no more labor and no more time than the simple melting part of the English method of making cast-steel. The long *cementation* process is entirely done away with. The ingots, when taken from the molds, are ready to be reheated for hammering or rolling, and these operations are conducted as in other steel-works.

Variations from the old methods of making steel have very generally proved failures in consequence of a want of uniformity in the article manufactured. Purchasers will pay a high price for a quality of steel they are sure of, in preference to running any risk of finding a cheaper article unsuitable for the use required.

The samples which have come under the observation of the writer at intervals for about a year past, have appeared to be of the best quality of cast steel, and this of the different varieties used for files, saw-plates and drill steel. A specimen taken to Lake Superior last Summer was most thoroughly tried by the blacksmith who had charge of sharpening the drills for the Minnesota mine, which, by the way, is an office requiring no little skill. This Cornish mechanic thoroughly understood the working of steel. He had even been in Sheffield and seen the process of making it there, and believed in it religiously, scouting at all other creeds. The appearance of the steel was in its favor; it had the look of English cast-steel, and in his mind there was no doubt it was made in the same way. He shaped it with the rapidity and mysterious skill with which a potter shapes the clay into a cup. It became a drill with the temper of the drills for boring the hard trap rock; the trials to which it was subjected, though rather severe, left it uninjured. Again in the fire and placed on the anvil, the temper was given it of the cutting chisels that are used for cutting through the great masses of copper. To test it, the cast iron horn of the anvil (luckily an old one) was chipped upon till it seemed likely there would be little left of it. These trials it stood as well as the drill had done before, and the result was an unqualified approval of the quality as equal to the best English steel used at the mine, with the reservation, however, that it was certainly made by the English process. A large lot of it has now gone up to the mine for actual use. At the Sing Sing file works it was also found of the best quality, but the question was, will it all prove so? The saw manufacturers who have purchased it say the same thing. What we have bought is excellent, but can we depend upon it? writes Mr. Ames, the famous manufacturer of shovels, in answer to inquiries made for information concerning this article:

No one speaks of having ever received any bad steel, and none such is to be seen among the numerous lots of the various qualities offered for sale at the office of the Damascus Steel Company. We are therefore inclined to have faith, that what has been so far done well will continue to be so done; and that the managers of the operations, knowing the great importance of this reputation for quality, will have the good sense to adopt the rule followed by all the famous manufacturing establishments in Great Britain—to let nothing go from their works that is at all imperfect, or can in any way injure the credit of their articles. By pursuing this course, which it is plain is in the power of this Company to do, there is no question but the Damascus Company's steel may become as fixed in its good character as the best steel of Sheffield. The experience already gained, as well as that still accumulating, affords to a process so new as this frequent valuable hints and suggestions, and it is reasonable to expect additional improvements beyond those already perfected. Various curious phenomena are continually brought out in operations of this kind, which add to our knowledge of the qualities of the materials treated, and point to better methods of accomplishing our objects. Thus it is found that different qualities of bar iron, which melt in the crucible at different temperatures, do not combine to so uniform a product as pieces of the same quality—a structure being developed somewhat open or honey-combed with seams that will not weld into one texture. This is avoided by using iron all of one quality, but this need not be very good to produce good steel. For the credit of our country we hope that this process or some other will prove stable in its character, and free us of our dependence upon Great Britain for supplies of this valuable material. Surely no country was ever better furnished with the choicest ores for this manufacture, and we do not willingly admit any deficiency of skill in working them. May it not be that some such process as this, better adapted than the old method to our notions, is what we have been waiting for.

SEWING MACHINE STATISTICS.—The total number of the various kinds of sewing machines, made and sold up to the present time, is about 30,000, with about 2,000 in the hands of dealers and agents.

Of these machines Mr. Singer has made about 9,000. he having the start by about two years of Messrs. Grover & Baker and Wheeler & Wilson, both of which Firms have made and sold about 7,500 machines each, with about 500 each in the hands of agents. There have been issued for machines and improvements 140 patents, the majority of which have proved entirely worthless. Several modifications of the most successful machines, for special purposes, have been made; such as machines for hatters' and shoemakers' use; for sewing sails, carpets, &c.

Wheeler & Wilson have several improvements in their later machines, which simplify and facilitate their use; and other parties using their machines on a large scale, have invented several very important devices for facilitating work in their own establishments. Of these, Messrs. Douglas & Sherwood, skirt manufacturers, are the most notable.

Mr. Singer's establishment and manufactory is in this city, and employs about 250 hands. The manufactory has a floor area equal to 25x700 feet, and can turn out about 200 machines per week.

Messrs. Grover & Baker's manufactory is in Boston, employs 250 men, and can turn out 200 machines a week. Their principal warehouse is in this city.

Wheeler & Wilson, up to the present time, have only been able to turn out 150 machines per week; but, having recently purchased the Jerome Clock Company's establishment at Bridgeport, to which they have made large additions, and introduced machinery for making all the parts of their sewing machine (the whole of which has been invented for exclusive use in their establishment), they will soon be able to turn out any number of machines that may be required.

For general family use, these latter machines are most extensively used. Messrs. Grover & Baker's machines are also very popular, and have their peculiar merits; as also have those of Mr. Singer's. These three are the principal firms now engrossing the market.

Mr. Elias Howe's patent needle is used on all these machines, and Mr. Howe receives a stated sum for its use on each machine sold, amounting to an aggregate of more than $60,000 per annum. Howe's patent expires by limitation in 1860. There are several person at present experimenting, with a view to produce a new machine, some of which seem to promise well.

COPPER-FACED TYPE.—In our last week's issue we promised to give, in this number, a brief history of the discovery, and some facts as to the advantages, of the new and beautiful process of copper-facing printing types. It has been some five or six years since the first experiments were made; and so rapid have been the improvements, and so perfect has the process now become, that nearly all the leading newspaper and book establishments in Europe and in this country employ copper-faced type exclusively. In a late visit to New-York City, we took pains to call at all the leading newspaper offices, in order to learn, by actual observation and inquiry, the estimate placed upon the process by those who had given it the most thorough and severe tests. Without exception, we found that every head printer agreed in giving the copper-faced type a decided preference over ordinary, not only for their far greater durability, but for pleasantness in composition, for ease in cleaning, and for their freer discharge of ink upon the paper, and consequently a brighter and clearer impression. Although we have had but a week or two's experience with our new improved type, yet we are convinced that they are far superior to any we have ever used before, and particularly in the respects mentioned above. The copper face facilitates composition, protects against bruises, washes easily, gives off ink freely, and gives a clear, sharp and legible impression, as will be seen by the print on this sheet, although the ink and paper are of a poorer quality than we generally use.

This most important improvement in printing type within the last century was suggested to the inventor, Dr. L. V. Newton, by the great wear of some stereotype plates upon which some of the Doctor's writings were being printed. It occurred to him that something ought and might be done to prevent such great wear, and thus enable printers to give a more uniform and beautiful print to large editions. Having previously had some experience in the use of the Galvanic Battery, after a little reflection upon the subject, it occurred to the Doctor that a harder and more durable surface could be had by depositing a harder metal upon the face of the stereotype plate by means of Galvanic Electricity. The earliest experiments showed that the idea was a correct one, and they also showed that in practice it was difficult in the then knowledge of the process of depositing metals in the cold state. In experimenting to perfect the details of the art, the Doctor was convinced that his invention might be applied to printing type, thus largely increasing its usefulness. He consequently extended his experiments to type, and here, also, the idea soon proved to be correct; but the difficulties in the practical working were increased. In addition to making the adhesence perfect, and also giving a deposit of exactly uniform thickness, there was the difficulty of separating the type perfectly and smoothly after the face had been put on. In the language of the workmen they would "tear ragged;" but through the perseverence of Dr. Newton and his associates, all difficulties have been overcome. The invention is now being worked on a large scale by an incorporated company called "*The Newton Copper Type Company*," who are able to turn out 1,000 lbs. of type per day, with as much certainty that it will be all right, and with no greater difficulty, certainly, than type founders meet in turning out their work properly.

When it is considered how much money has been expended in this and other countries to produce a more durable metal for the wearing surfaces, and to preserve the fine lines of printing type, it will at once be seen how important Dr. Newton's invention really is. It must be borne in mind that it has been established by practical results that copper-faced type do wear twice as long for all purposes, and four times as long for some purposes, as uncoppered type do. The copper makes a better surface to take impressions from, for either stereotyping or printing, and the fine lines are greatly protected from bruises in distribution, and from wear by the friction of the brush or the printing-press.

This invention, like all others, or rather more than most others, has to struggle into use against the fierce opposition of large invested capital and its employees, as well as the common prejudice against all inventions. But the time and money which have already been expended in perfecting the invention, and the details of working it, are a guaranty to printers that it will succeed, and that they and the public will reap large advantages from it. Already the saving by its use is quite four times its cost, as any one can see who will take the trouble to make the calculation, based upon the fact of double durability, and an additional cost of one fifth only to a font of type.
[Kalamazoo (Mich.) Gazette.

TWO MILLIONS OF TONS OF SILVER.—The future historian of Great Britain will doubtless relate, among the fashions of the nineteenth century, the rise and progress of aquariums,—how ladies, grown weary of buying and losing and rebuying their cats and dogs, drowned their sorrows in salt water, and transferred their affections to a lively shrimp. But while they are exploring the living wonders of the deep, scientific men have been ransacking the sea for treasures, if not as interesting, at least as valuable as the beautiful zoophytes; and their experiments have led them to the conclusion that the ocean holds dissolved two million tons of silver.

To three French chemists the discovery is due. They took gallons of water from the coast of St. Malo, a few leagues from land, and analysed it in two ways. A portion of the water they acted upon by the usual tests on silver, and the presence of the precious metal was clearly ascertained. The remainder of the water they evaporated, and the salt they obtained they boiled with lead.

This gave them a button of impure lead, which they subjected to what is called cupellation. This rather grand word denotes a very simple process. The button is placed upon a little tiny saucer made of lime and is submitted to heat sufficient to melt the lead, but not high enough to affect the silver, should any be present. The lead soon begins to melt, and, as it melts, it is sucked up by the porous little saucer or cupel; it grows smaller and smaller until no lead remains, and in its place is a little brilliant speck, far brighter than the boiling lead. The cupel is then removed from the fire, and as it cools the red hot sparks cool too, and you have a homeopathic globule of silver, very much like one of those small pills that druggists delude smokers into buying to take away the smell of the fragrant weed. The operation, as I have said, is very simple, and is the ordinary mode of procuring silver from the ore. Analyses are being made in this way every day at the Mint. When the presence of silver is doubtful the work is most exciting. I saw an English ore so tested the other day, and sure enough, after a few minutes of anxious watching, shone forth a bright spark about the size of a pin's head, for which our eyes were longing. The ore proved a very rich one, and we shall most likely hear more about it.

But we must not forget our French friends. Again and again they repeated the experiment with the same success. Then they sat down and made the calculation that a cubic mile of ocean contains two pounds and three-quarters weight of silver. After this, they made another series of experiments: they gathered sea-weeds, preferring those known to botanists as fuci: because, as those plants have no roots to insert into the rocks, they must derive all their aliments from the sea. These they analyzed, and found them twenty-six times richer in silver than the water itself.

The results attracted the attention of an English chemist, Mr. Frederick Field, who is engaged in assaying silver in Chili; they induced him to commence a course of experiments upon the copper or yellow metal with which the hulls of vessels are sheathed. His knowledge of chemistry told him that if the sea contained silver, he would in all probability find the metal on the bottoms of vessels that had been at sea. He soon had an opportunity of testing the correctness of his surmise. The Ana Guimaraens, a large vessel under the Chilian flag, was hauled down to be repaired near Coquimbo, where Mr. Field resides. The ship had been seven years at sea, and trading the whole of the time in the Pacific Ocean; so that if silver existed in any ship's bottom it certainly would in the Ana Guimaraens! A few ounces of the metal sheathing were taken, and after a careful analysis, Mr. Field obtained from 5,000 grains a trifle more than two grains of silver, which is equal to one pound one ounce two pennyweights fifteen grains in the tun. There was no yellow metal on board the ship by which a comparison could be made with that which had been exposed to the salt water. But shortly afterward another vessel came into dock, and from her cabin a piece of metal was taken which had never been exposed to sea water, and another piece of equal weight was removed from the hull, which had been three years afloat. The metal from the hull yielded eight times as much silver as that taken from the cabin. Similar comparative analyses were made on other vessels, and a difference between the two metals was invariably found—the difference varying according to the length of time the ship had been at sea. In those ships that had been the shortest time at sea the difference was least, and *vice versa*.

But why should there be any silver in the brass and copper used in the cabins? Well, it appears that in these metals there is generally a little silver—two or three pennyweights per tun; and beyond this Mr. Field accounts for it from the employment of masses of metal melted down from old sheathings, which derive their silver from former voyages. One other experiment Mr. Field is at present carrying out. He has granulated some very pure copper—a portion is reserved in a bottle to be compared at a future period with the other portion, which is floating in a wooden box, perforated on all sides, a few feet below the surface of the Pacific. When a good-humored captain puts into Coquimbo, he takes the box in tow and drags it at the stern of his vessel up and down the coast of Chili. Just as you have tried to catch a mackerel's tail, so is Mr. Field trying to catch silver with his copper bait.

The curious discovery of sea-water silver gives rise to one or two questions. Where, for instance, does the silver come from? Has it been extracted from the earth by artificial means, the waste of man's diggings, borne to the bosom of the ocean by rivers, which, like giant arteries, burst from the heart of the earth? It could scarcely be that man, avaricious man, could have let two millions of tons of silver so slip through his fingers. No! we may acquit the world of so egregious a blunder. That the presence of silver in the sea is more ancient than human folly or cupidity, M. Durocher and his friends, who first called attention to the subject, have proved by procuring the precious metal from crystals of rock salt which had been deposited anterior to the existence of man upon this earth.

One experiment leads to another. If the sea could be made to yield silver, where might not the metal be found? The wood of the oak, birch, beech, hornbeam, aspen, apple and ash, grown at long distances from the sea, and which had never been manured with salt or seaweed, has been burnt, and in the ashes silver has been detected. But if plants contained silver it was not difficult to infer that it existed also in animals. This was proved to be the case by an experiment which brought these remarkable researches to a triumphant conclusion. An ox was sacrificed to science, and in his blood was discovered the same valued metal.

The explanation of these phenomena is not very difficult. The sulphide of silver, or silver in combination with sulphur, is very widely diffused in nature. Salt water attacks the sulphide and converts it into chloride of silver, which it dissolves by the agency of common salt. So, also, the common salt contained in the water of the earth acts in a similar manner, dissolving out small quantities of metal, which it carries off and transfers to plants and, from plants it is received by animals in their food.

What the value of the discovery may be, remains to be proved. Wiseacres may shake their heads, and pronounce it useless. But, if no attempt be made to turn it to account, one of two things will be clearly shown; either that silver is not so scarce as some people would make us believe, or else we can do very well without it. [Household Words.

CHEAP LANDS IN MICHIGAN.—A correspondent at Mason, Ingham County, Michigan, wishes us to impress upon those who are about to emigrate westward, that the best open country to obtain cheap new lands is now to be found in that State. "For many years "the tide has rolled past toward other Western States, "until now the chance for a poor man to get land is "much better in Michigan than any other Western "State; and he can get locations nearer schools and "other conveniences, where he can make a beginning "much easier than upon the prairies of Illinois, where "lumber is $25 a thousand and wood $4 to $7 a cord. "Illinois, Iowa and other prairie States have great "advantages for making great farms, but not so for "little farmers. Here lumber is worth from $7 to $10 "a thousand, and wood and water plenty for almost "no cost. Stone for building purposes is abundant, "and an extensive coal-bed has been recently discov-"ered a few miles distant. Wild land but a short dis-"tance from the State capital can be bought from $5 "to $15 an acre, and improved farms from $15 to $30 "an acre. In the north part of the State there is a "good deal of Government land still subject to entry."

MORE FILLIBUSTERING.—A Washington letter-writer says:

"Private advices were received here from California by the last steamer stating that the clipper-ship Ocean Bird had sailed from San Francisco for San Juan del Sur with 293 men, well officered, equipped and provisioned, to aid Gen. Walker. Considerable excitement prevailed in San Francisco, and the Californians were determined to take forcible possession of the Nicaragua route, to insure the safety of travel and the transit of its treasure. Whether Walker is "wiped out" or not, they are determined that the Costa Ricans shall not hold possession of the right of way to their exclusion. I am informed that a similar movement is being made in our Southern States, and that a demonstration will also be made in New-York. In a short period we may look consequently for important developments."

TROUBLE ON THE WISCONSIN.—We learn that a great number of rafts have been tied up above the Milwaukee and Mississippi Railroad crossing on the Wisconsin River, for a number of days. The water is very high, filling the channel up to the floor of the bridge, and is still rising. This stage of the water has prevented the rafts from passing under the bridge, and is detaining many million feet that the owners were hurrying to the southern markets. The rafts are maned by a large number of stout men, who have little objection to a row, and a foray upon the bridge has been expected for some days. Last evening, we understand, a party came to this city, and after consulting the best legal talent, gave the representatives of the Company notice that "to morrow the bridge "must come down." They are evidently in earnest, and unless some accommodation takes place, serious difficulties may be expected. Superintendent Jarvis, of the Railroad, arrived here last night, and left for the scene of the expected attack. All the hands that the Railroad Company could muster have also been sent down to defend the bridge. We did not understand whether the first bridge, below Mazo Manie, or one lower down, was the cause of the trouble, but suppose it to be the first one. [Madison Argus, 15th.

FROM FORT BENTON.—Mr. Picotte, of the firm of Picotte, Harvie & Co., arrived in this city a day or two since from Fort Benton. He informs us that the trade with the Indians has been very successful the past season, and that the Indians had been quiet and friendly. A great deal of snow fell during the Winter, and should it melt suddenly, high water may be anticipated in the Upper Missouri. Mr. Picotte left his trading post in advance of the shipment of furs, &c., and they are not expected to arrive until late in the season. [St. Louis Republican.

The Wheeling papers note the presence in that city, at a hotel, of a man in company with somebody's wife. He met a gentleman on the street, talked with him, and when they parted returned to the hotel in great haste, entered the lady's room, and in an excited manner exclaimed, "Your husband is now in the city on "his return home from Baltimore. I saw him, shook "hands with him, talked with him, and the poor fel-"low never suspected that you were here. Won't "he rave, though, when he gets home!" Shortly after this the lady and gentleman took passage for the East.

CAST STEEL BELL.—The Collinsville Company of Collinsville have recently hung a cast steel bell in the tower of one of their buildings, which is, perhaps, the only one made of similar metal in this country. It weighs some 700 pounds, and though possibly not hung to the best advantage, it gives forth a heavy, very musical and well sustained tone. It is thought superior to most bells of ordinary manufacture. The bell itself is a present to the Collinsville Company, from an English house.

Ice formed in Rochester on Sunday night, an inch thick. It is feared the fruit buds are injured.